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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,608	08/31/2001	Rajesh R. Shah	219.40223X00	7484

7590 01/26/2005

Rob D. Anderson
C/O BLAKELY, SOKOLOFF, TAYOR & ZAMAN LLP
12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025

EXAMINER

SHINGLES, KRISTIE D

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/942,608

Applicant(s)

SHAH ET AL.

Examiner

Kristie Shingles

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-23 are pending.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 20 and 30. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112, second paragraph

2. Claims 7 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scope of the claims is rendered indefinite since the Infiniband™

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trademark name appears in the claims. The trademark cannot be used properly to identify any particular material or product, thus use of a trademark in a claim renders it improper. Clarification and/or correction are required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8, 10-15 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Talluri et al* (USPN 6,748,429) in view of *Veghte et al* (USPN 6,246,409).

a. **Per claim 1**, *Talluri et al* teach a method for reporting topology changes in a subnet of a switched fabric including at least a client, a subnet manager (SM) and switches interconnected via links, said method comprising: creating and reporting a list of topology changes that are interesting to the client for topology change notifications (**Col.4 Lines 55-67, Col.5 Lines 46-63, Col.6 Line 8-Col.7 Line 67; topology manager makes a list of topology changes and modifications for the cluster/network**).

Yet *Talluri et al* fail to explicitly teach when a topology change occurs in the subnet, determining if the topology change is in the list of topology changes created by the interested client; and if the topology change is in the list of topology changes created by the interested client, reporting a topology change event to the interested client.

However, *Veghte et al* disclose determining a list of network resources (and added network resources) that are interesting to the user and reporting the network resource changes to the user (**Col.3 Line 53-Col.4 Line 65**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Talluri et al* and *Veghte et al* for the purpose of aggregating the list of network topology changes according to the user's interest and notifying the user of such modifications made within the network; because it would provide a constant update mechanism for reporting the status of the network's topology and available resources to clients of the network.

b. **Claims 11 and 19** contain limitations substantially equivalent to claim 1 and are therefore rejected under the same basis.

c. **Per claim 2, *Veghte et al* teach the method as claimed in claim 1, wherein said list of topology changes is created by the client to serve as client-defined filters that specify the types of topology changes the client is interested in receiving notifications (Col.4 Lines 5-39; client has ability to determine and specify the types of network resources interesting to the user based on the client's software, most frequently used resources and direct choices made by the client for additional specific resources).**

d. **Claims 12 and 29** are substantially equivalent to claim 2 and are therefore rejected under the same basis.

e. **Per claim 3, *Veghte et al* teach the method as claimed in claim 2, wherein said list of topology changes includes, but is not limited to, when a new data path is created between a pair of end nodes in the subnet, when an existing data path is destroyed between a pair of end**

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nodes in the subnet, when a new device is inserted in the subnet, and when an existing device is removed from the subnet (**Col.4 Line 54-Col.5 Line 20; topology changes comprise customizing the Network Neighborhood with the addition of device to the already-present network resources**).

f. **Claims 13 and 21** are substantially equivalent to claim 3 and are therefore rejected under the same basis.

g. **Per claim 4, Talluri et al** teach the method as claimed in claim 1, wherein said client corresponds to an end node of the subnet having at least one channel adapter (CA) installed to support one or more ports for data communication via said links of the subnet (**Col.4 Line 55-Col.5 Line 27; clients correspond to nodes in a cluster configuration with port and adapter connection access**).

h. **Per claim 5, Talluri et al** teach the method as claimed in claim 2, wherein said determining the topology change in the list of topology changes and said reporting the topology change events to the interested client are executed by said subnet manager (**Col.5 Line 46-Col.6 Line 25 and Col.7 Lines 56-67; topology manager is responsible for determining the topology changes of the cluster and where the reported topology changes should be implemented and distributed**).

i. **Per claim 6, Talluri et al** teach the method as claimed in claim 5, wherein said subnet manager (SM) is installed in another end node of the subnet, and is implemented either in hardware or software to provide management services for all switches and end nodes in the subnet (**Figure 3 and Col.5 Lines 28-62; the topology manager resides in the thread of the kernel of a node in the network, implement in hardware via software**).

j. **Claims 7, 14 and 15** are substantially equivalent to claim 6 and are therefore rejected under the same basis.

k. **Per claim 8, Talluri et al** teach the method as claimed in claim 5, wherein said subnet manager (SM) is installed in another end node of the subnet for discovering the subnet topology, assigning unique addresses to all ports that are connected to the subnet, and establishing possible data paths among all ports by programming switch forwarding tables for download to the switches in the subnet for routing data packets to destinations via possible data paths established between switch pairs (Col.5 Lines 45-62; **topology manager is responsible for managing the topology of the cluster, setting component attributes—such as IP addresses and SCI adapter addresses, creating the path connecting the nodes of the topology and defining a logical set of paths between the nodes as a set of links**).

l. **Claim 16** is substantially equivalent to claim 8 and is therefore rejected under the same basis.

m. **Per claim 9, Veghte et al** teach the method as claimed in claim 1, wherein said client sends a VendorSet (SetNotificationFilter) message to the subnet manager (SM) after the list of topology changes is created to indicate the topology changes that require client notifications, and said subnet manager (SM) sends a VendorGetResp (SetNotificationFilter) message back to the interested client to confirm receipt of the list of topology changes that the client is interested (Col.3 Line 41-Col.5 Line 49; **the client specifies the type of network resources changes he/she is interested in receiving notifications about and the Network Neighborhood provides the interface for the client to select and access a resource added to the network, confirmation of receipt is made via the visual display representation of the**

resource—when the icon is added to the client's display window then the confirmation of receipt is implied since the resource is now made accessible and available to the user).

n. **Claims 17 and 22** are substantially similar to claim 9 and are therefore rejected under the same basis.

o. **Per claim 10, Talluri et al** teach the method as claimed in claim 1, wherein said subnet manager (SM) sends a VendorSend (TopologyChangeNotification) message to the interested client after the topology change is determined in the list of topology changes to notify the topology change that occurred, and said client sends a VendorSendResp (TopologyChangeNotification) message back to the subnet manager (SM) to acknowledge the topology change notification (Col.5 Line 45-Col.8 Line 17; **topology manager sends a notification message for the topology change, then the Kernel topology manager uses a callback function and the path manager to compare the old configuration tree with the new configuration tree to determine that each node has acknowledged and carried out the topology changes).**

p. **Claims 18 and 23** are substantially equivalent to claim 10 and are therefore rejected under the same basis.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. *Natarajan et al* (USPN 6,584,502) disclose a technique for providing automatic event notification of changing network conditions to network elements in an adaptive, feedback-based data network.
- b. *Sugano et al* (USPN 6,205,478) disclose a system for exchanging user information among users.
- c. *Hemphill et al* (USPN 6,490,617) disclose active self-discovery of devices that participate in a network.
- d. *Moshaiov* (USPN 6,678,726) disclose a method and apparatus for automatically determining topology information for a computer within a message queuing network.
- e. *Yanagawa* (USPN 6,667,992) discloses a network control system.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
Art Unit 2141

kds



RUPAL DHARIA
SUPERVISORY PATENT EXAMINER